

Docket No. 241079US0X/atp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Tsutomu USHIODA, et al.

SERIAL NO: 10/630,666

GAU:

FILED: July 31, 2003

EXAMINER:

METALLOCENE COMPOUNDS, PROCESSES FOR THE PRODUCTION OF OLEFIN POLYMERS USING CATALYSTS CONTAINING THE COMPOUNDS, AND OLEFIN POLYMERS PRODUCED BY THE PROCESSES

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

REFERENCES

- ☒ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

- ☐ Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.
- ☐ A check is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION


- ☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment form is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.


Norman F. Oblon
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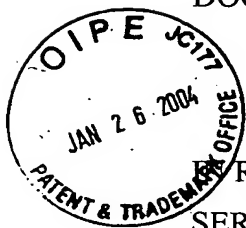
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DOCKET NO.: 241079US0X/atp



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RE APPLICATION OF: Tsutomu USHIODA, et al.

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GROUP:

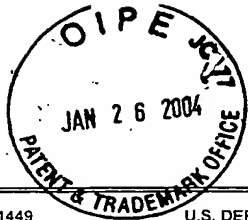
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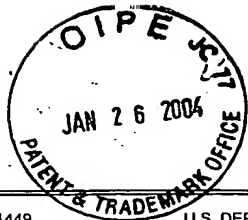
FOR: METALLOCENE COMPOUNDS, PROCESSES FOR THE PRODUCTION OF OLEFIN
POLYMERS USING CATALYSTS CONTAINING THE COMPOUNDS, AND OLEFIN
POLYMERS PRODUCED BY THE PROCESSES

STATEMENT OF RELEVANCY

References AC, AG, AI, AK, AL, AN through AS, AU, AW, AY,
BA, BC through BG, BI, BK, BM, BO through CK on Form 1449
are discussed in the specification.



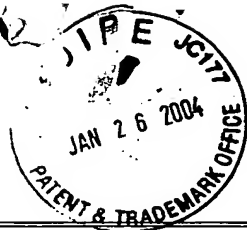
Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 241079US0X		SERIAL NO. 10/630,666	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT Tutomu USHIODA, et al.			
				FILING DATE July 31, 2003		GROUP	
U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA	5,278,264	01/11/94	S. SPALECK, et al.			
	AB	6,552,210	04/22/2003	M. GÖRES, et al.			
	AC	5,064,802	11/12/91	J. C. STEVENS, et al.			
	AD	6,169,051	01/02/2001	S. MITANI, et al.			
	AE	6,326,493	12/04/2001	S. MITANI, et al.			
	AF	2001/0053833 A1	12/20/2001	M. NAKANO, et al.			
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES NO		
	AG	6-184179	07/05/94	JAPAN (with English Abstract and corr. CA 2,084,017)			X
	AH	2,084,017	05/31/93	CANADA			
	AI	6-100579	04/12/94	JAPAN (with English Abstract and corr. CA 2,099,214)			X
	AJ	2,099,214	12/28/93	CANADA			
	AK	7-188318	07/25/95	JAPAN (with English Abstract and corr. US 5,278,264)			X
	AL	WO 01/48034	07/05/2001	WIPO (with English Abstract and corr. CA 2,395,552)			X
	AM	2,395,552	06/21/2002	CANADA			
	AN	10-087716	04/07/98	JAPAN (with English Abstract)			X
	AO	8-208909	08/13/96	JAPAN (with English Abstract)			X
	AP	8-283343	10/29/96	JAPAN (with English Abstract)			X
	AQ	WO 00/20426	04/13/2000	WIPO			
	AR	2002-509936	04/02/2002	JAPAN (with English Abstract and corr. US 6,552,210)			X
	AS	1-501950	07/06/89	JAPAN (with English Abstract and corr. WO 88/05792)			X
	AT	WO 88/05792	08/11/88	WIPO			
	AU	1-502036	07/13/89	JAPAN (with English Abstract and corr. WO 88/05793)			X
	AV	WO 88/05793	08/11/88	WIPO			
	AW	3-179005	08/05/91	JAPAN (with English Abstract and corr. EP 0 427 697)			X
	AX	0 427 697	05/15/91	EUROPE			
	AY	3-179006	08/05/91	JAPAN (with English Abstract and corr. EP 0 427 696)			X
	AZ	0 427 696	05/15/91	EUROPE			
					<input checked="" type="checkbox"/> Additional References sheet(s) attached		
Examiner					Date Considered		
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							



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				FILING DATE July 31, 2003		GROUP	
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES NO		
	BA	3-207704	09/11/91	JAPAN (with English Abstract and corr. EP 0 426 638)			X
	BB	0 426 638	05/08/91	EUROPE			
	BC	WO 92/00333	01/09/92	WIPO			
	BD	WO 93/03067	02/18/93	WIPO			
	BE	4-309508	11/02/92	JAPAN (with English Abstract)			X
	BF	4-353502	12/08/92	JAPAN (with English Abstract)			X
	BG	5-331232	12/14/93	JAPAN (with English Abstract and corr. EP 0 572 003)			X
	BH	0 572 003	12/01/93	EUROPE			
	BI	WO 96/41808	12/27/96	WIPO (with English Abstract and corr. EP 0 775 707)			X
	BJ	0 775 707	05/28/97	EUROPE			
	BK	7-149833	06/13/95	JAPAN (with English Abstract and corr. EP 0 629 632)			X
	BL	0 629 632	12/21/94	EUROPE			
	BM	8-283343	10/29/96	JAPAN (with English Abstract)			X
	BN	0 834 519	04/08/98	EUROPE			
	AM	2002-194016	07/10/2002	JAPAN (with English Abstract and corr. US 2001/0053833 A1)			X
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)							
	BO	T. SUGANO, et al., SPO '99, pages 31, 33-53, "NOVEL METALLOCENE CATALYST FOR PROPYLENE POLYMERIZATION", 1999					
	BP	J. A. BANDY, et al., J. Chem. Soc. Dalton Trans., pages 2207-2216, "POLYMERISATION OF ETHYLENE AND PROPENE USING NEW CHIRAL ZIRCONIUM DERIVATIVES. CRYSTAL STRUCTURE OF [ZrL ¹ Cl ₂] - [H ₂ L ¹ = (4S,5S)-TRANS-4,5-BIS(1H-INDEN-1-YLMETHYL)-2,2-DIMETHYL-1,3-DIOXOLANE]", 1991					
	BQ	J. GRÄPER, et al., Journal of Organometallic Chemistry, vol. 501, pages 211-218, "ZIRCONOCENOPHANE DICHLORIDES WITH DI- AND TRISILOXANE-BRIDGED RING LIGANDS: CRYSTAL STRUCTURE OF RAC-[1,1,3,3-TETRAMETHYLDISILOXANE-DIYL-BIS(3-TERT-BUTYL-η ⁵ -CYCLOPENTADIENYL) ZIRCONIUM (IV) DICHLORIDE]", 1995					
	BR	H. PLENIO, et al., Journal of Organometallic Chemistry, vol. 519, pages 269-272, "AMINOZIRCONOCENES: A NEW CLASS OF ZIRCONOCENES WITH A NITROGEN ATOM DIRECTLY BONDED TO AN η ⁵ -CYCLOPENTADIENYL (INDENYL) LIGAND", 1996					
	BS	H. G. ALT, et al., Journal of Organometallic Chemistry, vol. 564, pages 109-114, "SYNTHESIS, CHARACTERIZATION AND POLYMERIZATION POTENTIAL OF ANSA-METALLOCENE DICHLORIDE COMPLEXES OF TITANIUM, ZIRCONIUM AND HAFNIUM CONTAINING A Si-N-Si BRIDGING UNIT", 1998					
					<input checked="" type="checkbox"/> Additional References sheet(s) attached		
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	BT	C. J. SCHAUVERIEN, et al., Journal of Molecular Catalysis A: Chemical, vol. 128, pages 245-256, "PHOSPHORUS-BRIDGED METALLOCENES: NEW HOMOGENEOUS CATALYSTS FOR THE POLYMERIZATION OF PROPENE", 1998					
	BU	K. A. RUFANOV, et al., Journal of Organometallic Chemistry, vol. 525, pages 287-289, "HETERO-ANSA-METALLOCENES: I. SYNTHESIS OF THE NOVEL [1]-BORYLIDENE-BRIDGED ANSA-ZIRCONOCENE DICHLORIDE", 1996					
	BV	A. J. ASHE, III, et al., Organometallics, vol. 18, pages 2288-2290, "AMINOBORANEDIYL-BRIDGED ZIRCONOCENES: HIGHLY ACTIVE OLEFIN POLYMERIZATION CATALYSTS", 1999					
	BW	K. RUFANOV, et al., Journal of Organometallic Chemistry, vol. 536-537, pages 361-373, "POLYELEMENT SUBSTITUTED CYCLOPENTADIENES AND INDENES - NOVEL LIGAND PRECURSORS FOR ORGANOTRANSITION METAL CHEMISTRY", 1997					
	BX	M. T. REETZ, et al., Chem. Commun., pages 1105-1106, "DONOR COMPLEXES OF BIS(1-INDENYL)PHENYLBORANE DICHLOROZIRCONIUM AS ISOSPECIFIC CATALYSTS IN PROPENE POLYMERIZATION", 1999					
	BY	K. A. O. STARZEWSKI, et al., Angew. Chem. Int. Ed., Communications, vol. 38, no. 16, pages 2439-2443, "DONOR/ACCEPTOR METALLOCENES: A NEW STRUCTURE PRINCIPLE IN CATALYST DESIGN", 1999					
	BZ	H. YAMANAKA, et al., vol. II, page 108, "CHEMISTRY OF HETERO RING COMPOUND", 1998 (with partial English translation)					
	CA	T. KUNIEDA, et al., vol. 1, no. 1, page 26, "CHEMISTRY OF HETERO RING", March 25, 2002 (with partial English translation)					
	CB	M. BOYD, vol. 3, no. 8, pages 356-359, "ORGANIC CHEMISTRY", 1977 (with partial English translation)					
	CC	M. BOYD, vol. 3, no. 8, pages 1231-1232, "ORGANIC CHEMISTRY", 1977 (with partial English translation)					
	CD	J. A. EWEN, et al., J. Am. Chem. Soc., vol. 123, pages 4763-4773, "CHIRAL ANSA METALLOCENES WITH CP RING-FUSED TO THIOPHENES AND PYRROLES: SYNTHESSES, CRYSTAL STRUCTURES, AND ISOTACTIC POLYPROPYLENE CATALYSTS", 2001					
	CE	E. J. M. DE BOER, et al., Journal of Molecular Catalysis A: Chemical, vol. 128, pages 155-165, "PHOSPHOLYL CATALYSTS FOR OLEFIN POLYMERIZATION", 1998					
	CF	J. A. EWEN, et al., J. Am. Chem. Soc., vol. 120, pages 10786-10787, "POLYMERIZATION CATALYSTS WITH CYCLOPENTADIENYL LIGANDS RING-FUSED TO PYRROLE AND THIOPHENE HETEROCYCLES", 1998					
	CG	C. JANIAK, et al., Chem. Ber., vol. 129, pages 1517-1529, "ETHENE POLYMERIZATION ACTIVITY AND COORDINATION GAP APERTURE IN NON-ANSA ALKYL-SUBSTITUTED CYCLOPENTADIENYL-AND PHOSPHOLYL-ZIRCONIUM/MAO CATALYSTS", 1996					
	CH	Macromolecules, Communications to the Editor, vol. 6, no. 6, pages 925-926, "CARBON-13 OBSERVATIONS OF THE STEREOCHEMICAL CONFIGURATION OF POLYPROPYLENE", November- December 1973					
	CI	Macromolecules, Communications to the Editor, vol. 8, no. 5, pages 687-689, "MODEL COMPOUNDS AND ¹³ C NMR OBSERVATION OF STEREOSEQUENCES OF POLYPROPYLENE", September-October 1975					
						<input checked="" type="checkbox"/> Additional References sheet(s) attached	
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SHEET 4 OF 4

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	CJ	T. TSUTSUI, et al., Polymer, vol. 30, pages 1350-1356, "PROPYLENE HOMO-AND COPOLYMERIZATION WITH ETHYLENE USING AN ETHYLENEBIS(1-INDENYL) ZIRCONIUM DICHLORIDE AND METHYLALUMINOXANE CATALYST SYSTEM", July 1989					
	CK	JIS K 7210, pages 1-16, "TESTING METHOD FOR MELT FLOW RATE OF THERMOPLASTICS", 1976					
	CL	W. SPALECK, et al., Journal of Molecular Catalysis A: Chemical, vol. 128, pages 279-287, "NEW BRIDGED ZIRCONOCENES FOR OLEFIN POLYMERIZATION: BINUCLEAR AND HYBRID STRUCTURES", 1998					
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